

Combination

1) Different elements can be reacted together to form compounds with properties that are different to the original elements. The reaction of iron and sulfur to form iron(II) sulfide is an example of a combination reaction where all species (reactants and products) have different properties. Give a detailed account of this combination reaction. In your answer you should:

- state the conditions required for this reaction to occur
- describe any observations that would be made
- outline the physical and chemical properties of EACH of the species
- explain why the properties of the reactants differ from those of the products
- write a balanced symbol equation for the reaction.

2) Chemical compounds are made by combining elements. For example, magnesium oxide is made by combining magnesium and oxygen, and carbon dioxide is made by combining carbon and oxygen. Compare and contrast the combination reaction that produces magnesium oxide with the combination reaction that produces carbon dioxide. In your answer, you should:

- state the conditions required for EACH combination reaction to occur
- describe what would be observed in EACH combination reaction
- write a balanced symbol equation for EACH combination reaction
- discuss the similarities and differences between the TWO combination reactions.